Stepper™

Snapshot

Ok on Dimmer	⊘
Outdoor OK	⊘
Sound Activated	✓
DMX/Master/Slave	✓
115V/230V Switch	✓
Replaceable Fuse	✓
User Serviceable	⊘

USER MANUAL

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1. Before You Begin

What is included

- 1 x Stepper™
- Power cord
- CH64535 120V 650W lamp or CH64540 230V 650W lamp
- Warranty Card & Manual

Unpacking Instructions

Immediately upon receiving a fixture, carefully unpack the carton. Check the contents to ensure that all parts are present, and have been received in good condition. Notify the shipper immediately and retain packing material for inspection if any parts appear damaged from shipping or the carton itself shows signs of mishandling. Save the carton and all packing materials. In the event that a fixture must be returned to the factory, it is important that the fixture be returned in the original factory box and packing.

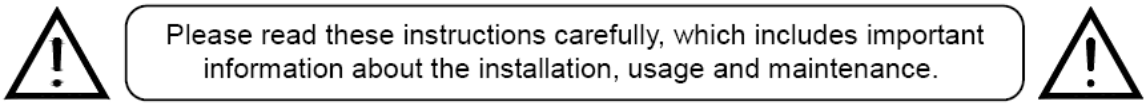
AC Power

To determine the power requirements for a particular fixture, see the label affixed to the back plate of the fixture or refer to the fixture's specifications chart. A fixture's listed current rating is its average current draw under normal conditions. All fixtures must be powered directly off a switched circuit and cannot be run off a rheostat (variable resistor) or dimmer circuit, even if the rheostat or dimmer channel is used solely for a 0% to 100% switch. Before applying power to a fixture, check that the source voltage matches the fixture's requirement. Check the fixture carefully to make sure that the voltage selection switch is set to the correct line voltage you will use.

Figure 1 - AC Voltage Switch

Not all fixtures have a voltage select switch. Please be sure to connect to the proper voltage.

Warning! ***Verify that the voltage select switch on your unit matches the line voltage applied. All fixtures must be connected to circuits with a suitable Earth Ground.***


Please read these instructions carefully, which includes important information about the installation, usage and maintenance.

Safety Instructions

- Please keep this User Guide for future consultation. If you sell the unit to another user, be sure that they also receive this instruction booklet.
- Always make sure that you are connecting to the proper voltage and that the line voltage you are connecting to is not higher than that stated on decal or rear panel of the fixture.
- To prevent risk of fire or shock, do not expose fixture to rain or moisture. Make sure there are no flammable materials close to the unit while operating.
- The unit must be installed in a location with adequate ventilation, at least 20 inches (50cm) from adjacent surfaces. Be sure that no ventilation slots are blocked.
- Always disconnect from power source before servicing or replacing lamp or fuse and be sure to replace with same lamp source.
- Secure fixture to fastening device using a safety chain. Never carry the fixture solely by its head. Use its carrying handles.
- In the event of serious operating problem, stop using the unit immediately. Never try to repair the unit by yourself. Repairs carried out by unskilled people can lead to damage or malfunction. Please contact the nearest authorized technical assistance center. Always use the same type spare parts.
- Don't connect the device to a dimmer pack.
- Make sure power cord is never crimped or damaged.
- Never disconnect the power cord by pulling or tugging on the cord. Instead, grip the plug to remove it.
- Do not look directly at the lamp while it is on.
- Do not touch the fixture while it is in operation, as it may become very hot.
- Maximum ambient temperature (Ta) is 104°F (40°C). Do not operate fixture at temperatures higher than this.
- This product is intended for indoor use only!

Caution! ***There are no user serviceable parts inside the unit. Do not open the housing or attempt any repairs yourself. In the unlikely event your unit may require service, please contact CHAUVET at: 954-929-1115.***

2. Introduction

Features

- 2-channel DMX-512 effect
- DMX control over:
  - Blackout/strobing
  - Speed, stuttering and direction of rotation
  - Pre-programs
  - Sound-activation
- Built-in automated programs via master/slave or DMX
- Built-in sound activated programs via master/slave or DMX

Additional Features

- 40 white lenses with a 4-color drum that rotates and shakes
- Linkable with Kinta™ & Oceana™
- Automatically enters stand-alone when no DMX signal is present
- Fan cooled

DMX Channel Summary

Channel	Function
1	Rotate
2	Strobe

Product Overview

DMX Channel Select

DMX Input Connector

DMX Output Connector

Sound Sensitivity

Wired Remote

Built-in Microphone

3. Setup

Lamp

This fixture comes with a 650 watt lamp, which must be installed prior to the first operation of the fixture.

Warning! ***When replacing the lamp, please wait 15 minutes after powering down to allow the unit to cool down! Always disconnect from main power prior to lamp replacement.***

Do not touch the envelope (glass area) of the bulb with bare hands. If this happens, clean the lamp with alcohol and wipe it with a lint-free cloth before installation. Failure to clean the lamp after handling with bare hands may result in premature lamp failure or fire.

Lamp Replacement

1) Remove the two lamp cover screws located on the top of the fixture as indicated in Figure 1.
2) Place the lamp base plate on the fixture as indicated in Figure 2.
3) The lamp is held in place by tension provided by springs inside of the ceramic socket. It is important to proceed with lamp removal and replacement very delicately.
4) Hold lamp with a napkin as indicated in Figure 3, and pull directly away from the base plate.
5) Hold new lamp with a lint-free cloth and insert directly into socket.
6) Replace top cover.

Figure 1

Figure 2

Figure 3

Mounting

ORIENTATION

This fixture may be mounted in any position provided there is adequate room for ventilation.

RIGGING

It is important to never obstruct the fan or vents' pathway. Mount the fixture using a suitable "C" or "O" type clamp. Adjust the angle of the fixture by loosening both knobs and tilting the fixture. After finding the desired position, retighten both knobs.

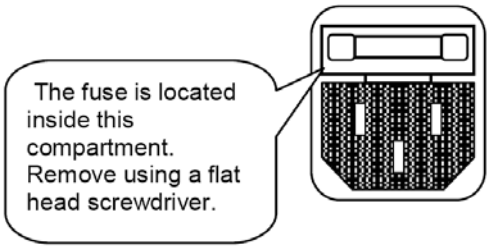
Hanging Clamp
(sold separately)

- When selecting the installation location, take into consideration lamp replacement access and routine maintenance.
- Safety cables should always be used.
- Never mount in places where the fixture will be exposed to rain, high humidity, extreme temperature changes or restricted ventilation.

Disconnect the power cord before replacing a fuse and always replace with the same type fuse.

Fuse Replacement

1) Disconnect the power cord.
2) With a flat head screwdriver, wedge the fuse holder out of its housing.
3) Remove the damaged fuse from its holder and replace with the exact same type of fuse.
   Note: a spare fuse is included with this fixture in the fuse compartment.
4) Insert the fuse holder back in its place.
5) Reconnect the power cord.



4. Operating Instructions

Operating Modes

- A stand-alone mode will listen to sound and run through its range of built-in programs. An optional CH-X wired controller provides remote blackout control.
- Master/Slave mode will allow the use of up to 32 units in a synchronized light show.
- DMX control mode will provide the greatest flexibility and creativity. Each fixture trait can be controlled individually using any universal DMX-512 controller.

Stand Alone

The Stand Alone mode is activated automatically when no DMX signal is sensed, or a controller is not connected. The Stepper will run through its built in programs as it listens to the sound. The optional CH-X wired controller also provides a blackout function.

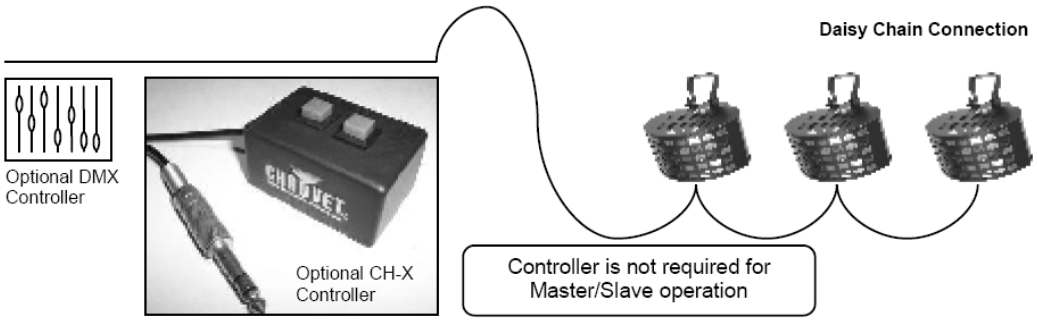
Master/Slave

The Master/Slave mode will allow you to link up to 32 units in a daisy chain fashion. In this mode, the first unit in the daisy chain will automatically command all other units following. An optional CH-X controller connected to the first unit in the chain will allow a blackout function for the entire chain. Connecting the Stepper™ for (Master/Slave) operation does not require any menu or setting selections. Simply connect each unit in a daisy like fashion using qualified 3-pin DMX cables as described below.

MASTER/SLAVE SETTINGS

1) Connect the male 3-pin connector side of the DMX cable to the output (female) 3-pin connector of the first fixture.

2) Connect the female end of the cable coming from the first fixture to the male input connector of the next fixture. Then, proceed to connect from the output as stated above to the input of the following fixture as illustrated below. Repeat this process until all lights are connected.


Daisy Chain Connection
Optional DMX Controller
Optional CH-X Controller
Controller is not required for Master/Slave operation

Note! ***For additional information on linking fixtures read under section "DMX Primer"***

DMX Mode

Operating in DMX Control mode gives the user the greatest flexibility when it comes to customizing or creating a show. You can tailor your programming to suit a specific event. Whether it is a wedding where a spot light may be required, or a lead singer requiring a color solo, the opportunities are endless. In this mode you will be able to control each individual trait of the fixture independently

Note! **Enable DMX control on the Stepper™ by setting dipswitch 1-9 with the desired starting address.**

SETTING THE STARTING ADDRESS

This DMX mode enables the use of a universal DMX controller device. Each fixture requires a "start address" from 1 to 511. A fixture requiring one or more channels for control begins to read the data on the channel indicated by the start address. For example, a fixture that uses 6 DMX channels and was addressed to start on DMX channel 100, would read data from channels: 100, 101, 102, 103, 104, and 105. Choose start addresses so that the channels used do not overlap, and note the start address selected for future reference.

If this is your first time addressing a fixture using the DMX-512 control protocol, we suggest jumping to the Appendix Section and reading the heading “DMX Primer”. It contains very useful information that will help you understand its use.

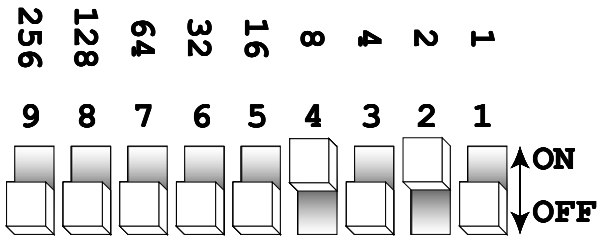
Set the start address using the group of DIP switches located usually on bottom of the fixture. Each dip switch has an associated value. Adding the value of each switch in the ON position will provide the start address. Figuring out which switches to toggle ON given a specific start address can be accomplished by determining which switch values will add up to the address value, and turning these switches on. Do so by doing the following:

1) Determine the largest value switch that is less than the start address. Turn this switch on.
2) Subtract the value of the switch you just turned on from the starting address number.
3) Determine the largest value switch that is less than the remainder from the previous subtraction. Turn this switch on.
4) Subtract the value of the switch you just turned on from the remainder of the previous subtraction.
5) Repeat steps three and four until you have a remainder of zero.

EXAMPLE STARTING ADDRESS

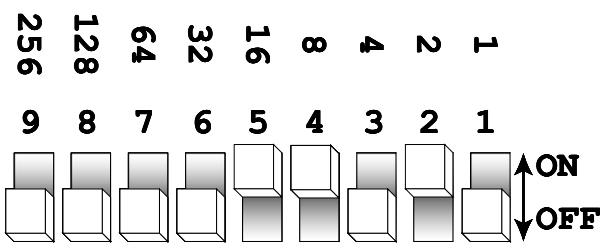
Address 10

Pin # 4 = 8
Pin # 2 = 2
Total = 10



Address 24

Pin # 5 = 16
Pin # 4 = 8
Total = 24



Resolving address using simple math.

Address 233

233 – (128) = 105, Turn ON Dip # 8
105 – (64) = 41, Turn ON Dip # 7
41 – (32) = 9, Turn ON Dip # 6
9 – (8) = 1, Turn ON Dip # 4
1 – (1) = 0, Turn ON Dip # 1

DIP SWITCH	(DMX VALUE)
1	1
2	2
3	4
4	8
5	16
6	32
7	64
8	128
9	256

5. Appendix

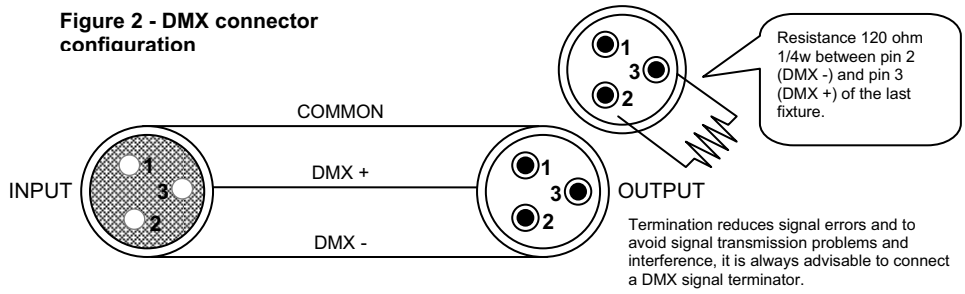
DMX Primer

There are up to 512 channels in a DMX-512 connection. Channels may be assigned in any manner. A fixture capable of receiving DMX-512 will require one or a number of sequential channels. The user must assign a starting address on the fixture that indicates the first channel reserved in the controller. There are many different types of DMX-controllable fixtures and they all may vary in the total number of channels required. Choosing a start address should be planned in advance. Channels should never overlap. If they do, this will result in erratic operation of the fixtures whose starting address is set incorrectly. You can, however, control multiple fixtures of the same type using the same starting address as long as the intended result is that of unison movement or operation. In other words, the fixtures will be slaved together and all respond exactly the same.

DMX fixtures are designed to receive data through a serial Daisy Chain. A Daisy Chain connection is where the DATA OUT of one fixture connects to the DATA IN of the next fixture. The order in which the fixtures are connected is not important and has no effect on how a controller communicates to each fixture. Use an order that provides for the easiest and most direct cabling. Connect fixtures using shielded two-conductor twisted-pair cable with 3-pin XLR male-to-female connectors. The shield connection is pin 1, while pin 2 is Data Negative (S-) and pin 3 is Data positive (S+). CHAUVET carries 3-pin XLR DMX compliant cables: DMX-10 (33'), DMX-4.5 (15') and DMX-1.5 (5')

FIXTURE LINKING

Figure 2 - DMX connector configuration


1
3
2
Resistance 120 ohm 1/4w between pin 2 (DMX -) and pin 3 (DMX +) of the last fixture.
COMMON
INPUT
DMX +
DMX -
OUTPUT
Termination reduces signal errors and to avoid signal transmission problems and interference, it is always advisable to connect a DMX signal terminator.

Note! ***If you use a controller with a 5 pin DMX output connector, you will need to use a 5 pin to 3 pin adapter. CHAUVET Model No: DMX5M.***
The chart below details a proper cable conversion:

3 PIN TO 5 PIN CONVERSION CHART

CONDUCTOR	3 Pin Female (output)	5 Pin Male (Input)
GROUND/SHIELD	Pin 1	Pin 1
DATA (-)SIGNAL	Pin 2	Pin 2
DATA (+) SIGNAL	Pin 3	Pin 3
DO NOT USE		Do not use
DO NOT USE		Do not use

DMX Quick Reference Chart

DMX Address Quick Reference Chart

Dip Switch Position

DMX DIP SWITCH SET																					
0=OFF	#9	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1				
1=ON	#8	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1				
	#7	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1				
X=OFF or ON	#6	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1				
#1	#2	#3	#4	#5																	
0	0	0	0	0		32	64	96	128	160	192	224	256	288	320	352	384	416	448	480	
1	0	0	0	0	1	33	65	97	129	161	193	225	257	289	321	353	385	417	449	481	
0	1	0	0	0	2	34	66	98	130	162	194	226	258	290	322	354	386	418	450	482	
1	1	0	0	0	3	35	67	99	131	163	195	227	259	291	323	355	387	419	451	483	
0	0	1	0	0	4	36	68	100	132	164	196	228	260	292	324	356	388	420	452	484	
1	0	1	0	0	5	37	69	101	133	165	197	229	261	293	325	357	389	421	453	485	
0	1	1	0	0	6	38	70	102	134	166	198	230	262	294	326	358	390	422	454	486	
1	1	1	0	0	7	39	71	103	135	167	199	231	263	295	327	359	391	423	455	487	
0	0	0	1	0	8	40	72	104	136	168	200	232	264	296	328	360	392	424	456	488	
1	0	0	1	0	9	41	73	105	137	169	201	233	265	297	329	361	393	425	457	489	
0	1	0	1	0	10	42	74	106	138	170	202	234	266	298	330	362	394	426	458	490	
1	1	0	1	0	11	43	75	107	139	171	203	235	267	299	331	363	395	427	459	491	
0	0	1	1	0	12	44	76	108	140	172	204	236	268	300	332	364	396	428	460	492	
1	0	1	1	0	13	45	77	109	141	173	205	237	269	301	333	365	397	429	461	493	
0	1	1	1	0	14	46	78	110	142	174	206	238	270	302	334	366	398	430	462	494	
1	1	1	1	0	15	47	79	111	143	175	207	239	271	303	335	367	399	431	463	495	
0	0	0	0	1	16	48	80	112	144	176	208	240	272	304	336	368	400	432	464	496	
1	0	0	0	1	17	49	81	113	145	177	209	241	273	305	337	369	401	433	465	497	
0	1	0	0	1	18	50	82	114	146	178	210	242	274	306	338	370	402	434	466	498	
1	1	0	0	1	19	51	83	115	147	179	211	243	275	307	339	371	403	435	467	499	
0	0	1	0	1	20	52	84	116	148	180	212	244	276	308	340	372	404	436	468	500	
1	0	1	0	1	21	53	85	117	149	181	213	245	277	309	341	373	405	437	469	501	
0	1	1	0	1	22	54	86	118	150	182	214	246	278	310	342	374	406	438	470	502	
1	1	1	0	1	23	55	87	119	151	183	215	247	279	311	343	375	407	439	471	503	
0	0	0	1	1	24	56	88	120	152	184	216	248	280	312	344	376	408	440	472	504	
1	0	0	1	1	25	57	89	121	153	185	217	249	281	313	345	377	409	441	473	505	
0	1	0	1	1	26	58	90	122	154	186	218	250	282	314	346	378	410	442	474	506	
1	1	0	1	1	27	59	91	123	155	187	219	251	283	315	347	379	411	443	475	507	
0	0	1	1	1	28	60	92	124	156	188	220	252	284	316	348	380	412	444	476	508	
1	0	1	1	1	29	61	93	125	157	189	221	253	285	317	349	381	413	445	477	509	
0	1	1	1	1	30	62	94	126	158	190	222	254	286	318	350	382	414	446	478	510	
1	1	1	1	1	31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	511	

Dip Switch Position DMX Address

DMX Channel Values

Channel	Value	Function
1	0-19	Stop
	20-59	Rotate Down (fast to slow)
	60-119	Stutter Down (fast to slow)
	120-139	Stop
	140-199	Stutter Up (slow to fast)
	200-249	Rotate Up (slow to fast)
	250-255	Music Trigger
2	0-19	Turn Off
	20-59	No Function
	60-99	Turn On
	100-255	Strobe (slow to fast)

Maintenance

To maintain optimum performance and minimize wear, fixtures should be cleaned frequently. Usage and environment are contributing factors in determining frequency. As a general rule, fixtures should be cleaned at least twice a month. Dust build up reduces light output and can cause overheating. This can lead to reduced lamp life and increased mechanical wear. Be sure to power off fixture before conducting maintenance.

Unplug fixture from power. Use a vacuum or air compressor and a soft brush to remove dust collected on external vents and internal components. Clean all glass when the fixture is cold with a mild solution of glass cleaner or Isopropyl Alcohol and a soft lint free cotton cloth or lens tissue. Apply solution to the cloth or tissue and drag dirt and grime to the outside of the lens. Gently polish optical surfaces until they are free of haze and lint. Do not to touch the lamp glass when cleaning fixture. Oil and dirt can cause damage and premature aging of the lamp. In the event that the lamp is touched or becomes dirty, clean the lamps with an alcohol wipe.

The cleaning of internal and external optical lenses and/or mirrors must be carried out periodically to optimize light output. Cleaning frequency depends on the environment in which the fixture operates: damp, smoky or particularly dirty surroundings can cause greater accumulation of dirt on the unit's optics. Clean with soft cloth using normal glass cleaning fluid. Always dry the parts carefully. Clean the external optics at least every 20 days. Clean the internal optics at least every 30-60 days.

General Troubleshooting

Symptom	Solution(s)	Applies to			
		Lights	Foggers & Snow	Controllers	Dimmers & Chaser
Auto shut off	Check fan thermal switch reset	✓			
Beam is very dim or not bright	Clean optical system or replace lamp Check 220/110v switch for proper setting	✓			
Breaker/Fuse keeps blowing	Check total load placed on device				✓
Chase is too slow	Check users manual for speed adjustment	✓		✓	✓
Device has no power	Check for power on Mains. Check device's fuse. (internal and/or external)	✓		✓	✓
Fixture is not responding	Check DMX Dip switch settings for correct addressing Check DMX cables Check polarity switch settings	✓			
Fixture is on but there is no movement to the audio	Make sure you have the correct audio mode on the control switches. If audio provided via ¼" jack, make sure a live audio signal exists Adjust sound sensitivity knob	✓		✓	✓
Lamps cuts off sporadically	Possible bad lamp or fixture is overheating. Lamp may be at end of its life.	✓			
Light will not come on after power failure	Some discharge lamps require a cooling off period before the electronics in the fixture can kick start it again, wait 5 to 10 minutes before powering up	✓			
Loss of signal	Use only DMX cables Install terminator Note: Keep DMX cables separated from power cables or black lights.	✓	✓	✓	✓
Moves slow	Check 220/110v switch for proper setting	✓			
No flash	Re-install bulb, may have shifted in shipping	✓			
No laser output	Bounce mirror motor may have shifted during shipping, readjust	✓			
No light output	Check slip ring & brushes for contact Install bulb Call service technician	✓			
Relay will not work	Check reset switch Check cable connections				✓
Remote does not work	Make sure connector is firmly connected to device	✓	✓		
Stand alone mode	All Chauvet lighting fixtures featuring stand-alone functions do not require additional settings, simply power the fixture and it will automatically enter into this mode	✓			

Troubleshooting

Please refer to the troubleshooting chart on page 13. If you still have a problem after trying those solutions, please contact Chauvet Technical Support at (954) 929-1115 (press 4), or e-mail: tech@chauvetlighting.com.

Returns Procedure

Returned merchandise must be sent prepaid and in the original packing, call tags will not be issued. Package must be clearly labeled with a Return Authorization Number (RA #). Products returned without an RA # will be refused. Call CHAUVET and request an RA # prior to shipping the fixture. Be prepared to provide the model number, serial number and a brief description of the cause for the return. Be sure to properly pack fixture, any shipping damage resulting from inadequate packaging is the customer's responsibility. CHAUVET reserves the right to use its own discretion to repair or replace product(s). As a suggestion, proper UPS packing or double-boxing is always a safe method to use.

Note: If you are given an RA #, please include the following information on a piece of paper inside the box:

1) Your name
2) Your address
3) Your phone number
4) The RA #
5) A brief description of the symptoms

Claims

Damage incurred in shipping is the responsibility of the shipper; therefore the damage must be reported to the carrier upon receipt of merchandise. It is the customer's responsibility to notify and submit claims with the shipper in the event that a fixture is damaged due to shipping. Any other claim for items such as a missing component/part, damage not related to shipping, and concealed damage, must be made within seven (7) days of receiving merchandise.

Technical Specifications

WEIGHT & DIMENSIONS

Length	15 in (381 mm)
Width	15 in (381 mm)
Height	12 in (305 mm)
Weight	11.5 lbs (5.2 kg)

POWER

Switch-selectable power	115V 60 Hz or 230V 50 Hz
AC input	3-prong IEC 60320 C14 male socket
Power consumption	592W peak @ 120V)
Inrush current	1,276W @ 120V)

LAMP

CH64535	650W 120V
CH64540	650W 230V

THERMAL

Maximum ambient temperature	104° F (40°C)

FUSE

Main	20mm Glass 7A Fast Blow 250V

CONTROL & PROGRAMMING

Data input	locking 3-pin XLR male socket
Data output	locking 3-pin XLR female socket
Data pin configuration	pin 1 shield (ground), pin 2 (-), pin 3 (+)
Protocols	DMX-512 USITT
DMX Channels	2

ORDERING INFORMATION

Stepper	STEPPER
Blackout Controller	CH-X